

#4

OIPE

## RAW SEQUENCE LISTING

DATE: 09/06/2000

PATENT APPLICATION: US/09/645,706

TIME: 12:02:11

Input Set : A:\341-005US1.txt.txt

Output Set: N:\CRF3\09062000\I645706.raw

ENTERED

See P. 5

4 <110> APPLICANT: Wood, Keith V.  
5 Gruber, Monika G.  
6 Zhuang, Yao  
8 <120> TITLE OF INVENTION: SYNTHETIC NUCLEIC ACID MOLECULE  
9 COMPOSITIONS AND METHODS OF PREPARATION  
11 <130> FILE REFERENCE: 341.005US1  
C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/645,706  
C--> 13 <141> CURRENT FILING DATE: 2000-08-24  
13 <160> NUMBER OF SEQ ID NOS: 302  
15 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
17 <210> SEQ ID NO: 1  
18 <211> LENGTH: 1629  
19 <212> TYPE: DNA  
20 <213> ORGANISM: Pyrophorus plagiophthalmus  
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25 ttagtagatg tgtttggtga cgaatcgctt tcctataaag agttttttga agctacatgc 180  
26 ctcttagcgc aaagtctcca caattgtgga tacaagatga atgatgtagt gtcgatctgc 240  
27 gccgagata ataaaagatt ttttattccc attattgcag cttgggtatat tggatatgatt 300  
28 gtagcacctg ttaatgaaag ttacatccca gatgaactct gtaaggctcat gggatatatcg 360  
29 aaaccacaaa tagttttttg tacaagaagc attttaaata aggtattgga ggtacagagc 420  
30 agaactaatt tcataaaaag gatcatcata cttgatactg tagaaaacat acacggttgt 480  
31 gaaagtcttc ccaattttat ttctcgttat tcggatggaa atattgccaa cttcaaacct 540  
32 ttacattacg atcctggtga gcaagtggca gctatcttat gttcgtcagg cactactgga 600  
33 ttaccgaaag gtgtaatgca aactcaccaa aatatttggt tccgacttat acatgcttta 660  
34 gacccacagg caggaacgca acttattcct ggtgtgacag tcttagtata tctgcctttt 720  
35 ttccatgctt ttgggttctc tataaacttg ggatacttca tgggtgggtct tctgtttatc 780  
36 atgttaagac gatttgatca agaagcattt ctaaaagcta ttcaggatta tgaagttcga 840  
37 agtgttaatta acgttccagc aataatattg ttcttatcga aaagtccttt ggttgacaaa 900  
38 tacgatttat caagttaag ggaattgtgt tgcggtgcgg caccattagc aaaagaagtt 960  
39 gctgaggttg cagtaaaacg attaaacttg ccagggaattc gctgtggatt tggtttgaca 1020  
40 gaatctactt cagctaatat acacagtctt ggggatgaat ttaaatcagg atcaacttga 1080  
41 agagttaact ctttaatggt agctaaaata gcagatagg aaactggtaa agcattggga 1140  
42 ccaaatcaag ttggtgaatt atgcgttaaa ggtcccatgg tatcgaaagg ttacgtgaac 1200  
43 aatgtagaag ctaccaaaag agctattgat gatgatggtt ggcttcactc tggagacttt 1260  
44 ggatactatg atgaggatga gcatttctat gtggtggacc gttacaagga attgattaaa 1320  
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46 atcagagatg ttgctgtggt tggatttcct gatctagaag ctggagaact gccatctgcg 1440  
47 tttgtggtta aacagcccg aaaggagatt acagctaaag aagtgtacga ttatcttgcc 1500  
48 gagagggctc cccatacaaa gtatttgcgt ggaggggttc gattcgttga tagcatacca 1560  
49 aggaatgtta caggtaaaat tacaagaaag gaacttctga agcagttgct ggagaagagt 1620  
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53 <211> LENGTH: 1626  
54 <212> TYPE: DNA  
55 <213> ORGANISM: Artificial Sequence

RECEIVED  
SEP 20 2000  
OIPE/JCWS

RAW SEQUENCE LISTING      DATE: 09/06/2000  
 PATENT APPLICATION: US/09/645,706      TIME: 12:02:11

Input Set : A:\341-005US1.txt.txt  
 Output Set: N:\CRF3\09062000\I645706.raw

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58 <223> OTHER INFORMATION: Sequence of clone YG#81-6G01
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63 ttagtagatg tgggtggcga cgaatcgctt tcctataaag agttttttga agcgacagtc      180
64 ctccatagcg aaagtctcca caattgtgga tacaagatga atgatgtagt gtcgatctgc      240
65 gccgagaata atacaagatt ttttattccc gttattgcag cttgggtatat tggatatgatt      300
66 gtacgacctg ttaatgaaag ttacatccca gatgaactct gtaagggtgat gggatatatcg      360
67 aaaccacaaa tagtttttac gacaaagaac attttaaata aggtattgga ggtacagagc      420
68 agaactaatt tcataaaaag gatcatcata cttgatactg tagaaaacat acacgggttgt      480
69 gaaagtcttc ccaattttat ttctcggtat tcggatggaa atattgccaa cttcaaacct      540
70 ttacatttcg atcctgttga gcaagtggca gctatcttat gttcgtcagg cactactgga      600
71 ttaccgaaag gtgtaatgca aactcaccaa aatatttgtg tccgacttat acatgcttta      660
72 gaccccgagg caggaacgca acttattcct ggtgtgacag tcttagtata tctgcctttt      720
73 ttccatgctt ttgggttctc tataaccttg ggatacttca tgggtgggtct tctgtttatc      780
74 atgttcagac gatttgatca agaagcattt ctaaaagcta ttcaggatta tgaagttcga      840
75 agtgaatta acgttccatc agtaatatgt ttcttatcga aaagtccttt ggttgacaaa      900
76 tacgatttat caagtttaag ggaatttgtg tgcggtgcgg caccattagc aaaagaagtt      960
77 gctgagggtg cagcaaaaac attaaacttg ccaggaattc gctgtggatt tggtttgaca      1020
78 gaattctact cagctaatat acacagtcct agggatgaat ttaaatcagg atcacttgga      1080
79 agagttaact ctttaatggc agctaaaata gcagataggg aaactggtaa agcattggga      1140
80 ccaaatcaag ttggtgaatt atgcattaaa ggtcccatgg tatcgaaagg ttacgtgaac      1200
81 aatgtagaag ctaccaaaag agctattgat gatgatggtt ggcttcactc tggagacttt      1260
82 ggatactatg atgaggtatg gcattttctat gtggtggacc gttacaagga attgattaaa      1320
83 tataagggct ctccaggtagc acctgcagaa ctagaagaga ttttattgaa aaatccatgt      1380
84 atcagagatg ttgctgttgt tggatttctt gatctagaag ctggagaact gccatctgcg      1440
85 tttgtggtta aacagcccg aaaggagatt acagctaaag aagtgtacga ttatcttgcc      1500
86 gagagggtct cccatacaaa gtatttgcgt ggaggggttc gattcgttga tagcatacca      1560
87 aggaatgta caggtaaaat tacaagaaag gaacttctga agcagttgct ggagaaggcg      1620
88 ggaggt
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91 <211> LENGTH: 1626
92 <212> TYPE: DNA
93 <213> ORGANISM: Artificial Sequence
95 <220> FEATURE:
96 <223> OTHER INFORMATION: Sequence of a synthetic luciferase
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100 ctgaccgccg gtgagatggt gttccgtgct ctgcgtaaac attctcactt gcctcaagcc      120
101 ctggttgatg tctgtggcga cgaagccttg tcttataagg agtttttcga agctactgtc      180
102 ctgttgcccc agtctctgca taattgcggt tacaaaatga acgatgtggt cagcatttgt      240
103 gctgagaata acacccgctt ttcatccca gtgattgccg cttggtacat cggcatgatt      300
104 gtcgcccctg tgaatgaatc ttatatccca gacgagttgt gcaaggatcat gggatttagc      360
105 aaacctcaaa tcgtgtttac taccaagaac attctgaata aagtcttgga agtcagctct      420
106 cgtactaact tcataaagcg cattatcatt ctggataccg tcgagaatat ccacggctgt      480
107 gaaagcttgc caaactttat ttctcgttat agcgacggta atatcgctaa cttcaagcct      540
108 ctgcattttg atccagtggg gcaagtcgcc gctattttgt gctctagcgg cactaccggt      600
109 ctgcctaaag gcgtgatgca gactcaccaa aatatctgtg tccgcttgat tcatgccctg      660

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Input Set : A:\341-005US1.txt.txt

Output Set: N:\CRF3\09062000\I645706.raw

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110 gaccacacgtg tgggtaccca gttgatccct ggcgtgactg tcctgggtgta cttgccattc 720
111 ttccacgcct tcgggttttc tattaccctg ggcattttca tggtcgggtt gcgcgtgac 780
112 atgtttcgtc gcttcgatca agaagctttt ctgaaggcca ttcaggacta cgaggtcgt 840
113 agcgtgatca acgtcccttc tgtgattttg ttcctgagca aatctccatt ggtcgataag 900
114 tatgacctga gctcttttgc cgaactgtgc tgtggcgctg cccctttggc taaagagggtg 960
115 gccgaagtgc ctgccaaagc tctgaatttg ccaggatcc gctgcggctt tggctctgact 1020
116 gagagcaact ctgctaact tcatagcttg cgtgatgaat tcaaatctgg cagcctgggt 1080
117 cgcgtgactc ctttgatggc cgctaagatc gccgaccgtg agaccggcaa agctctgggt 1140
118 ccaaatcaag tcggcgcaatt gtgtattaag ggtcctatgg tgtctaaagg ctacgtcaac 1200
119 aatgtggagg ccaactaagg agctatcgat gacgatggtt ggctgcacag cggcgacttt 1260
120 ggttattacg atgaggacga acatttctat gtcgtggatc gctacaaaaga gttgattaag 1320
121 tataaaggct ctcaggtcgc ccagctgag ctggaagaga tcttgctgaa gaacccttgc 1380
122 attcgtgacg tggcgcgtgc ggggtatcca gatttggaag ctggcgagct gcctagcgcc 1440
123 ttgttcgtga aacaaccagg taaggaaatt accgctaaag aggtctacga ctatttgcc 1500
124 gaacgcgtgt ctcacactaa gtacctgcgt ggcggtgtcc gcttcgtgga tagcatccct 1560
125 cgcaatgtca ccggcaaaat tactcgtaag gagttgctga aacagttgct ggaaaaggct 1620
126 ggtggc
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129 <211> LENGTH: 1626
130 <212> TYPE: DNA
131 <213> ORGANISM: Artificial Sequence
133 <220> FEATURE:
134 <223> OTHER INFORMATION: Sequence of a synthetic luciferase
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138 ctgaccgctg gtgagatgtt gttccgtgct ctgcgtaaac attctcactt gcctcaagcc 120
139 ctggtcgatg tcgtggcgga cgagagcttg tcttataaag aatttttcga agctactgtc 180
140 ctgttgggcc aatctctgca taattgcggt tacaaaatga acgatgtggt cagcatttgt 240
141 gctgagaata acaccgcgtt ttcatccca gtgattgccc cttggtacat cggcatgatt 300
142 gtcgcccctg tgaatgaatc ttatatccca gacgagttgt gcaaggatcat ggggtattagc 360
143 aaacctcaaa tcgtgtttac taccaagaac attctgaata aggtcttgga agtgacgtct 420
144 cgtactaact tcatcaagcg cattatcatt ctggataccg tcgagaatat ccacggctgt 480
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146 ctgcattttg atccagtggg gcaagtcgcc gctattttgt gctctagcgg caccaccggt 600
147 ctgcctaaag gcgtgatgca gactcaccaa aatatctgtg tccgcttgat tcatgccctg 660
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158 ggttattacg atgaggacga acatttctat gtcgtcgatc gctacaaaaga gttgattaag 1320
159 tataaaggct ctcaagtcgc ccagctgag ctggaagaaa tcttgctgaa gaacccttgc 1380
160 attcgtgacg tggcgcgtgc ggggtatcca gatttggaag ctggcgagct gcctagcgcc 1440
161 ttgttcgtga aacaaccagg caaggaaatt accgctaaag aggtctacga ctatttgcc 1500

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RAW SEQUENCE LISTING  
 PATENT APPLICATION: US/09/645,706

DATE: 09/06/2000  
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Input Set : A:\341-005US1.txt.txt  
 Output Set: N:\CRF3\09062000\I645706.raw

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163 cgcaatgtca ccggcaaaat tactcgtaag gagttgctga aacagttgct ggaaaaggct 1620
164 ggtggc 1626
166 <210> SEQ ID NO: 5
167 <211> LENGTH: 1626
168 <212> TYPE: DNA
169 <213> ORGANISM: Artificial Sequence
171 <220> FEATURE:
172 <223> OTHER INFORMATION: Sequence of a synthetic luciferase
174 <400> SEQUENCE: 5
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177 ctggtggacg tcgtgggtga cgagagcctg tcttaccaaag aatttttcga agctactgtg 180
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182 cgtactaatt tcatacaacg cattattatt ctggataccg tcgaaaacat ccacggctgt 480
183 gagagcttgc ctaactttat ctctcgttac agcgatggta atatcgctaa tttcaagcca 540
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186 gaccctcggt tgggtactca attgatccct ggcgtagctg tgcgtgtgta ttgctttc 720
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188 atgtttcgtc gtttcgacca agaagccttc ctgaaggcta ttcaagacta cgagggtcgt 840
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191 gccgaggtcg ctgctaagcg tctgaacctc cctggtatcc gctgcgggtt tggtttgact 1020
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193 cgcgtgacct ctttgatggc tgcaaaagat gccgaccgtg agaccggcaa agccctgggc 1140
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196 ggttattatg atgaggacga acacttctat gtggtcgatc gctataaaga attgattaag 1320
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198 attcgcgacg tggcgcgtgt ggggtatcca gacttggaag ctggcgagtt gcctagcgcc 1440
199 tttgtggtga aacaacctgg caaggagatt actgctaagg aggtctacga ctatttggcc 1500
200 gagcgcggtgt ctcacactaa atatctcgct ggccggtgcc gcttcgtcga ttctatccct 1560
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205 <211> LENGTH: 1626
206 <212> TYPE: DNA
207 <213> ORGANISM: Artificial Sequence
209 <220> FEATURE:
210 <223> OTHER INFORMATION: Sequence of a synthetic luciferase
212 <400> SEQUENCE: 6
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214 ctcaccgctg gtgagatgct ctccgtgca ctgcgtaaac atagtcacct ccctcaagct 120
215 ctggtggacg tcgtgggtga cgagagcctc tcttaccaaag aatttttcga agctactgtg 180
216 ctggtggccc aaagcctcca taattgtgga tacaaaatga acgatgtggt gagcatttgt 240

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RAW SEQUENCE LISTING                      DATE: 09/06/2000  
 PATENT APPLICATION: US/09/645,706              TIME: 12:02:11

Input Set : A:\341-005US1.txt.txt  
 Output Set: N:\CRF3\09062000\I645706.raw

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218 gtcgcccctg tgaatgaatc ttacatccca gatgagctgt gtaagggtat gggatttagc 360
219 aaacctcaaa tcgtctttac taccaaaaat atcctgaata aggtcttgga agtccagtct 420
220 cgtactaact tcatcaaacg catcattatt ctggataccg tcgaaaacat ccattggctgt 480
221 gagagcctgc ctaacttcat ctctcgttac agcgatggta atatcgctaa tttcaaacca 540
222 ctgcattttg atccagtcca gcaagtggcc gctattttgt gctcttcagg caccactggt 600
223 ttgcctaaag gtgtcatgca gactcaccag aatatctgtg tgcgtttgat ccacgctctc 660
224 gaccctcggt tgggtactca attgatccct ggctgactg tgcgtgtgta tctgcctttc 720
225 tttcacgcct ttggtttttc tattaccctg ggctatttca tggctggcgt gcgtgtcctc 780
226 atgtttcgtc gcttcgacca agaagccttc ttgaaggcta ttcaagacta cgaggtgcgt 840
227 tctgtcatca atttccttcc agtcattttg ttcttgagca aatctccttt ggttgacaag 900
228 tatgatctga gcagcttgcg tgagctgtgc tgtggcgctg ctctttggc caaagaagtg 960
229 gccgaggtcg ctgctaagcg tctgaacctc cctggtagcc gctgcggttt tgggttgact 1020
230 gagagcactt ctgctaacat ccatagcttg cgagacgagt ttaagctctg tagcctgggt 1080
231 cgcgtagctc ctcttatggc tgcaaaagtc gccgacctg agaccggcaa agcactgggc 1140
232 ccaaatcaag tcggtgaatt gtgtattaa ggcctatgg tctctaaagg ctacgtgaac 1200
233 aatgtggagg ccaactaaag agccattgat gatgatggct ggctccatag cggcgacttc 1260
234 ggttactatg atgaggacga acacttctat gtggtcgatc gctacaaaga attgattaag 1320
235 tacaaggcct ctaagtcgc ccacgccgaa ctggaagaaa ttttgcgtga gaacctgtgt 1380
236 atccgcgacg tggcgcgtgt gggtagtcca gacttgaag ctggtgagtt gcctagegcc 1440
237 tttgtgtgta aacaacctgg aaaggagatc actgctaagg aggtctacga ctatttggcc 1500
238 gagcgctgtg ctcaaccaa atatctcgt ggcgcgctcc gcttcgtcga ttccatccca 1560
239 cgcaacgtga ccggttaagt cactcgtaaa gaattgctga agcaactcct cgaaaaagct 1620
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243 <211> LENGTH: 1626
244 <212> TYPE: DNA
245 <213> ORGANISM: Artificial Sequence
247 <220> FEATURE:
248 <223> OTHER INFORMATION: Sequence of a synthetic luciferase
250 <400> SEQUENCE: 7
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252 ctcaccgctg gtgagatgct ctcccgagca ctgctgaaac atagtacact cctcaagca 120
253 ctgctggacg tcgtgggaga cgagagcctc tctacaaaag aatttttcga agctactgtg 180
254 ctgttggccc aaagcctcca taattgtggg tacaaaatga acgatgtggt gagcatttgt 240
255 gctgagaata acactcgctt ctttatccct gtaatcgctg cttggtagat cggcatgatt 300
256 gtcgcccctg tgaatgaatc ttacatccca gatgagctgt gtaagggtat gggatttagc 360
257 aaacctcaaa tcgtctttac taccaaaaat atcttgaata aggtcttgga agtccagtct 420
258 cgtactaact tcatcaaacg catcattatt ctggataccg tcgaaaacat ccacggctgt 480
259 gagagcctcc ctaacttcat ctctcgttac agcgatggta atatcgctaa tttcaagccc 540
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261 ttgcctaaag gtgtcatgca gactcaccag aatatctgtg tgcgtttgat ccacgctctc 660
262 gaccctcggt tgggtactca attgatccct ggctgactg tgcgtgtgta tctgcctttc 720
263 tttcacgcct ttggtttctc tattaccctg ggctatttca tggctggcgt gcgtgtcctc 780
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266 tatgatctga gcagcttgcg tgagctgtgc tgtggcgctg ctctttggc caaagaagtg 960
267 gccgaggtcg ctgctaagcg tctgaacctc cctggtagcc gctgcggttt tgggttgact 1020
268 gagagcactt ctgctaacat ccatagcttg cgagacgagt ttaagctctg tagcctgggt 1080

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← F.Y.I.

**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY                      DATE: 09/06/2000  
PATENT APPLICATION:    US/09/645,706              TIME: 12:02:12

Input Set : A:\341-005US1.txt.txt  
Output Set: N:\CRF3\09062000\I645706.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application No  
L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:4423 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:228  
L:4581 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:242  
L:4618 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:245